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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,917	03/05/2001	Hossein Izadpanah	HRL080	5536
28848	7590	05/03/2005	EXAMINER	
TOPE-MCKAY & ASSOCIATES 23852 PACIFIC COAST HIGHWAY #311 MALIBU, CA 90265			SEDIGHIAN, REZA	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,917

Applicant(s)

IZADPANAH ET AL.

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3/7/05.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. This communication is responsive to applicant's response of 11/12/04 in the application of Izadpanah et al. for "Hybrid RF and optical wireless communication link and network structure incorporating it therein" filed 3/5/01. Claims 1-51 are now pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claims 1, 18, 29, and 42, Specification does not describe how allocating portions of data for transmission through the laser portion and the radio frequency portion. Specification discloses (page 2, lines 20-22) a node further includes a controller that is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion and the radio frequency portion, but not both (page 11, lines 6-8).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2, 8, 19, 29, 32, and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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As to claims 2, 8, 19, 29, 32, and 43 each recites limitations such as ... controller is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion and the radio frequency portion. However, such limitations are in contradict with the limitations such as ... allocate portions of the data to be transmitted through the laser portion and the radio frequency portion, which are recited in respective claims 1, 18, 29, and 42.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Willebrand et al.

(Patent Application Publication No: 2004/0037566 A1).

Regarding claim 1, as it is understood in view of the above 112 problems, Willebrand teaches a node (20, fig. 3) incorporating hybrid radio frequency and optical wireless communication links (26, 28, fig. 3), the node comprising: at least one laser portion (56, fig. 3) for transmitting data (page 5, paragraphs 0041, 0042); at least one radio frequency portion (58, fig. 3) for transmitting data; a data receiver (60, fig. 3) for receiving data from a data source (page 5, paragraphs 0041, 0042); and a controller (62, fig. 3) configured to receive data from a data source and connected with the laser portion and the radio frequency portion to allocate portions of the data to be transmitted through the laser portion or the radio frequency portion (page 11, see claim 1).

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Regarding claims 2 and 8, Willebrand teaches the controller is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion or radio frequency portion (page 12, see claim 2).

Regarding claims 3-4, 7, and 9, Willebrand teaches the controller is configured to receive environmental information and wherein the portions of the data to be transmitted through the laser portion and the radio portion are adjusted by the controller based on the environmental information (page 12, see claim 3).

Regarding claim 5, Willebrand teaches the laser portion is configured to both transmit and receive and wherein the radio frequency portion is configured to both transmit and receive (page 12, see claim 5).

Regarding claims 6, 13, and 16, Willebrand teaches the laser portion and the radio frequency portion are configured to transmit in multiple channels (page 12, see claim 6).

Regarding claims 10, 12, and 14, Willebrand teaches the laser portion and the radio frequency portion have transmit and receive strength, and wherein the controller is configured to monitor the transmit and receive strengths, and wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths (page 12, see claim 10).

Regarding claim 11, Willebrand teaches the controller includes a plurality of latches and a logic device, wherein the plurality of latches and logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (page 12, see claim 11).

Regarding claim 15, Willebrand teaches the laser portion and the radio frequency portion are configured to transmit and receive in tandem, whereby the node may be configured to provide a hybrid serial link to permit tailored radio frequency or optical network connections (page 12, see claim 15).

Regarding claim 17, Willebrand teaches an optical reflector is used to deflect transmissions from the laser portion in order to work around fixed objects in the environment, whereby the node may be used to extend a network and the laser portion can maintain communication without the need for a strict line-of-site connection (page 12, see claim 17).

Regarding claim 18, as it is understood in view of the above 112 problem, Willebrand teaches a network of plurality of nodes, wherein each node includes: at least one laser portion for transmitting data; at least one radio frequency portion for transmitting data; a data receiver for receiving data from a data source; and a controller configured to receive data from a data source and connected with the laser portion and the radio frequency portion to allocate portions of the data to be transmitted through the laser portion or the radio frequency portion (page 12, see claim 18).

Regarding claims 19, 32, and 43, as it is understood in view of the above 112 problem, Willebrand teaches the controller of each node is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion or the radio frequency portion (page 12, see claim 19).

Regarding claims 20-21, 29, 33, 42 and 45, as it is understood in view of the above 112 problems, Willebrand teaches the controller of each node is configured to receive environmental information, and wherein the portion of data to be transmitted through the laser portion or the

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radio frequency portion are adjusted by the controller based on the environmental information (pages 12, 13, see claims 20-21). As to claims 29 and 42, it further requires similar limitations, as recited in claim 18 above.

Regarding claims 22, 30, 34, 36, 38, and 44, Willebrand teaches the laser portion and the radio frequency portion of each node have transmit and receive strengths and wherein the controller is configured to monitor the transmit and receive strengths, wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths (page 13, see claim 22).

Regarding claims 23, 31, 37, 40, and 46, Willebrand teaches the laser portion and the radio frequency portion of each node are configured to transmit in multiple channels (page 13, see claim 23).

Regarding claims 24, 39, and 49, Willebrand teaches the laser portion and the radio frequency portion are configured to transmit and receive in tandem, whereby the node may be configured to provide a hybrid serial link to permit tailored radio frequency or optical network connections (page 13, see claim 24).

Regarding claims 25, 27, 47, and 50, Willebrand teaches at least a portion of the network is configured with a ring topology (page 13, see claims 25, 27).

Regarding claims 26, 28, 48, and 51, Willebrand teaches at least a portion of the network is configured as a SONET ring (page 13, see claims 26, 28).

Regarding claim 35, Willebrand teaches the controller includes a plurality of latches and a logic device, wherein the plurality of latches and logic device operate to provide adjustment

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levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (page 12, see claim 11).

Regarding claim 41, Willebrand teaches an optical reflector is used to deflect transmissions from the laser portion in order to work around fixed objects in the environment, whereby the node may be used to extend a network and the laser portion can maintain communication without the need for a strict line-of-site connection (page 12, see claim 17).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 5, 6, 15, 16, 18, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perdue et al. (US Patent No: 6,529,556) in view of Taglione et al. (US Patent No: 5,966,225).

Regarding claims 1 and 18, as it is understood in view of the above 112 problems, Perdue teaches a node (10, fig. 1) incorporating hybrid radio frequency and optical wireless communication links (col. 3, lines 65-67, col. 4, lines 1-9), the node comprising: an IR portion for transmitting data (16, fig. 1); a RF portion for transmitting data (17, fig. 1); a data receiver (14, 22, fig. 1) for receiving data from a data source (20, fig. 1); and a controller (14, fig. 1) configured to receive data from a data source and connected with the IR portion and the RF portion to transmit the data through the IR portion or RF portion (col. 2, lines 14-19, col. 5, lines 39-47). Perdue differs from the claimed invention in that Perdue does not specifically disclose

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allocating portions of data for transmission through the IR portion, or allocating portions of data for transmission through the RF portion. However, Perdue teaches the transmission of both RF and IR signal for each user input (col. 5, lines 39-40), and wherein portions of data (70, 72, fig. 4) are allocated for transmission through the IR portion (16, fig. 1 and 70, fig. 4), and portions of data are allocated (72, fig. 4) for transmission through the RF portion (17, fig. 1). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that a data communication system with a controller such as the one of Perdue can allocate portions of data for transmission through the IR portion, or portions of data through the RF portion to transmit portions of data signal in both IR and RF forms (see col. 2, lines 15-19). Perdue further differs from the claimed invention in that Perdue does not specifically disclose the IR portion is a laser. Perdue further teaches any one of a number of conventionally known IR transmitter arrangement may be used (col. 5, lines 23-25). It is well know to incorporate a laser for transmitting data signal, as such concept is taught by Taglione. Taglione teaches an IR transceiver (100, fig. 3 and col. 3, lines 47-56), wherein the IR emitter (108, fig. 3) can be a laser diode (col. 3, lines 53-54). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a laser transmitter, as it is taught by Taglione, for the IR portion in the data transmission system of Perdue to generate a uniform, narrow, and relatively high power output light.

Regarding claims 5, Perdue teaches the IR portion is configured to both transmit and receive and the RF portion is configured to both transmit and receive (col. 2, lines 51-55, col. 9, lines 8-24, col. 10, lines 13-34).

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Regarding claims 6 and 23, Perdue teaches the IR portion and the RF portion are configured to transmit and receive in multiple channels (col. 6, lines 23-34 and 76, 78 and 80, 82, fig. 5).

Regarding claims 15 and 24, Perdue teaches the IR portion and the RF portion are configured to transmit and receive in tandem (col. 2, lines 15-19).

Regarding claim 16, Perdue teaches the IR portion and the RF portion are configured to transmit and receive in multiple channels (col. 6, lines 23-34 and 76, 78 and 80, 82, fig. 5).

10. Claims 10, 12, 14, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perdue et al. (US Patent No: 6,529,556) in view of Taglione et al. (US Patent No: 5,966,225) and in further view of Vollert (German Patent No: DE 44 33 896 C1).

Regarding claims 10, 12, 14, and 22, the modified data transmission system of Perdue and Taglione differs from the claimed invention in that Perdue and Taglione do not disclose the controller is configured to monitor the transmit and receive strengths. Vollert teaches bi-directional transmission and reception of information over radio link (FUS, fig. 1) or optical link (IUS, fig. 1) based on verification of the transmission quality of different paths (translation page 5, last paragraph and page 6, first paragraph) by a controller (PST, fig. 1) and switching (translation page 6, lines 10-12) from one link to the other based on the evaluation and measurement results (translation page 6, lines 3-18). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate a controller such as the one of Vollert for the controller in the modified data transmission system of Perdue and Taglione to verify the transmission quality of the transmission paths.

11. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perdue et al. (US Patent No: 6,529,556) in view of Taglione et al. (US Patent No: 5,966,225) and in further view of Vowell et al. (US Patent No: 5,999,295), or Shibuya (US patent No: 6,509,991).

Regarding claim 11, the modified optical transmission system of Perdue and Taglione differs from the claimed invention in that Perdue and Taglione do not disclose the controller includes a plurality of latches and a logic device to further provide adjustments levels for the portions of data to be transmitted. Vowell teaches an IR transceiver module that includes an IR transmitter and receiver and a communication logic that is coupled to the transceiver to control communication (col. 3, lines 5-8), wherein the communication logic includes state machines, buffers, latches, registers, memories, etc (col. 3, lines 8-10). Likewise, Shibuya teaches a transmit and receive control unit (10, fig. 6) that is comprised of latches (59, 60, 61, fig. 6) and logic devices (62, 63, fig. 6). Therefore, it would have been obvious to a person of ordinary skill in the art at time of invention that a controller such as the one of Perdue can include latches and logic devices, as it is taught by Vowell or Shibuya, to provide monitoring and control functions.

Regarding claim 13, Perdue teaches the IR portion and the RF portion are configured to transmit in multiple channels (col. 6, lines 23-34 and 76, 78 and 80, 82, fig. 5).

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perdue et al. (US Patent No: 6,529,556) in view of Taglione et al. (US Patent No: 5,966,225) and in further view of Driessen (US Patent No: 5,936,578).

Regarding claim 17, the modified optical transmission system of Perdue and Taglione differs from the claimed invention in that Perdue and Taglione do not disclose an optical reflector to deflect transmission from the IR portion to work around the fixed objects. Driessen teaches an optical transmission system (fig. 6), wherein an optical reflector is used to deflect transmission from a laser portion to work around fixed objects (col. 6, lines 1-7). As it is taught by Driessen, it would have been obvious to an artisan at the time of invention to incorporate an optical reflector, when transmitting data signals over a free space as it is taught by Perdue, to provide a deflection for signal transmission around the fixed objects to further continue signal transmission without interruption.

13. Claim 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perdue et al. (US Patent No: 6,529,556) in view of Taglione et al. (US Patent No: 5,966,225) and in further view of Medved et al. (US Patent No: 5,818,619), or Bloom (US Patent No: 6,323,980).

Regarding claims 25-28, the modified data transmission system of Perdue and Taglione differs from the claimed invention in that Perdue and Taglione do not disclose a portion of the network is configured with a ring topology, or a SONET ring. However, it would have been obvious to a person of ordinary skill in the art that a wireless data transmission system such as the one of Perdue can be incorporated to a ring network to provide and share the information in a network. Furthermore, Medved teaches wireless communication systems (80, 82, 84, fig. 5) can be applicable to any type of network such as ring network (col. 1, lines 35-40). Bloom teaches optical transceivers (10, fig. 2) and RF transceiver (13, fig. 2) can be used in a network with a SONET format (col. 5, lines 30-45). Therefore, it would have been obvious to an artisan at the

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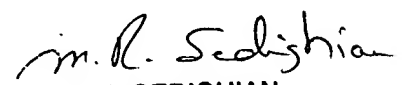
time of invention to incorporate a wireless data transmission system such as the one of Perdue in a ring network as it is taught by Medved, or in a SONET ring as it is taught by Bloom, in order to provide and share information between other wireless devices on a network.

14. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER